EE520: Topics in Communications

-- Wireless Communications (3 Credits)

Spring 2006

Instructor:
Sang W. Kim, 3112 Coover, 294-2726, swkim@iastate.edu

Lecture Hours:
TR 1:30-2:50

Office Hours:
T 4:00-5:30

Class Room:
Howe 1242

Course Description:
This course is to provide a strong foundation for graduate study and research in the area of wireless communications. Primary topics for the course are:

- Wireless channel models
- Capacity of wireless channels
- Digital modulation in wireless channels
- Diversity
- Coding for Wireless Channels
- Spread spectrum and Rake receivers
- Code division multiple access (CDMA)
- Orthogonal frequency division multiplexing (OFDM)
- Multiple antenna and space-time communications
- Advanced topics such as multiuser detection, cooperative communications, ultra-wideband communications as time allows

As part of the course work, students are required to write a term paper on a topic relevant to wireless communications. This paper can be either a thorough literature search on a specific topic, or a study presenting an original research contribution in the field. Papers should demonstrate understanding of the material taught. More information about the project requirements is in a separate handout.

Prerequisites:
Graduate Level Probability (EE 523 or equivalent)
An undergraduate course in digital communications (EE422 or equivalent)
Textbook:

References:

Grading:
- Homework: 10%
- Exam I: 30%
- Exam II: 30%
- Project: 30%

Disability Statement:
If you have a documented disability and anticipate needing accommodations in this course, please request that a Disability Resources (DR) staff send a Student Academic Accommodation Request (SAAR) form verifying your disability and specifying the accommodations you will need. DR is located in Room 1076 of the Student Services Building.